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Peter Kuhn

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EXAMINER

DIEP, NHON THANH

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/009,119	<b>Applicant(s)</b> KUHN, PETER	
	<b>Examiner</b> Nhon T. Diep	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31,33,35,37,39,41,42,44-46,48,49 and 51-65 is/are pending in the application.
- 4a) Of the above claim(s) 59-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31,33,35,37,39,41,42,44-46,48,49 and 51-58 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/2002; 5/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of claims 1-31, 33, 35, 37, 39, 41, 42, 44-46, 48, 49, and 51-65 in the reply filed on 2/13/2009 is acknowledged. The traversal is on the ground(s) that "The Office Action fails to identify distinct species of a genus. Indeed, there is no discussion of the alleged species in the Office Action. Contrary to the unsupported allegations of the Office Action, Figures 4, 5, 6, 7, 8, and 9 do not disclose species of a genus. For example, "Fig. 4 depicts an example of the basic organization of a transcoding hints metadata state diagram consisting of three discrete transcoding hints metadata states." Applicant's Specification, p. 12, ln. 6-7. As such, Figure 4 does not represent a different species, but rather represents states showing the underlying basic organization of the metadata". This is not found persuasive because there are clear differences in transcoding when the first bitstream is encoded as frame picture and second bitstream is encoded as field picture versus the transcoding when the first bitstream is encoded as field picture and second bitstream is encoded as frame picture.

Furthermore, newly added claims 59-65 direct to a new invention of transcoding, and the invention uses "a description of a distance between predetermined frames of the first content to transcode", and this feature is completely different from any of claims 1-31, 33, 35, 37, 39, 41, 42, 44-46, 48, 49, and 51-65, and because the newly added claims directs to a different and distinct invention after the application is required to select species, claims 59-65 are withdrawn from consideration.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Objections***

2. Claim 49 is objected to because of the following informalities: Claim 49 does not end with a period. Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-31, 33, 35, 37, 39, 41-42, 44-46, 48-49, 51-55 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding to claims 1-31, 33, 35, 37, 39, 41-42, 44-46, 48-49, 51-55, which are method claims, and that the claims do not fall within one of the four statutory categories of inventions. Supreme Court precedent and recent Federal Circuit decisions indicate a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, it is considered that none of the steps in the claims positively recites the other statutory class (the thing or product) to which it is tied, for example, by identifying the apparatus that accomplishes the method steps, In re Bilski, 88 USPQ2d 1385 (Fed. Cir. 2008).

5. Claims 2-4, 11-12, 18, 22, 27, 39, 41-42, 44-46, 48-49, 51-52 and 57 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a substantial and specific asserted utility or a well established utility.

Regarding to claim 2, line 17 which recites “defining whether **hold** picture are used for the...”; the specification does not disclose what the “**hold**” picture is, and therefore, the claimed invention is not supported by either a substantial and specific asserted utility or a well established utility.

Regarding to claims 11-12, lines 3-4 which recites “representing motion-related transcoding hints as an **array** of motion vectors...”; the specification does not disclose what the “an **array** of motion vectors” picture is, and therefore, the claimed invention is not supported by either a substantial and specific asserted utility or a well established utility.

Regarding to claims 18 (lines 4) and claim 22 (line 4) which recite “a **life-time** of feature points”; again, the specification does not disclose what the “a **life-time** of feature points” is, and therefore, the claimed invention is not supported by either a substantial and specific asserted utility or a well established utility.

Regarding to claim 27 (lines 2-5), claim 39 (lines 6-9) and similarly claims 41-42, 44-46, 51-52 and 57 which recite “utilizing motion information contained in the transcoding hints metadata to **extrapolate** second motion information for the second bitstream of compressed image data having a second GOP structure different from the first GOP structure” or “utilizing the stored first motion-related transcoding hints metadata to **extrapolate** second motion information for a second bitstream of compressed image data representing pictures of a second size different from the first size”; the specification does not disclose what the “utilizing motion information contained in the transcoding hints metadata to **extrapolate** second motion information for the

Art Unit: 2621

second bitstream of compressed image data having a second GOP structure different from the first GOP structure” or ”utilizing the stored first motion-related transcoding hints metadata to **extrapolate** second motion information for a second bitstream of compressed image data representing pictures of a second size different from the first size” is, and therefore, the claimed invention is not supported by either a substantial and specific asserted utility or a well established utility.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 2-4, 11-12, 18, 22, 27, 39, 41-42, 44-46, 51-52 and 57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claim 2, line 17 which recites “defining whether **hold** picture are used for the...”; the specification does not disclose what the “**hold**” picture is, and therefore, the claim(s) contains subject matter (periodically receiving..) which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claims 11-12, lines 3-4 which recites “representing motion-related transcoding hints as an **array** of motion vectors...”; the specification does not disclose

Art Unit: 2621

what the “an **array** of motion vectors” picture is, and therefore, the claim(s) contains subject matter (periodically receiving..) which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claims 18 (lines 4) and claim 22 (line 4) which recite “a **life-time** of feature points”; again, the specification does not disclose what the “a **life-time** of feature points” is, and therefore, the claim(s) contains subject matter (storing the periodically received image data..) which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claim 27 (lines 2-5), claim 39 (lines 6-9) and similarly claims 41-42, 44-46, 51-52 and 57 which recite “utilizing motion information contained in the transcoding hints metadata to **extrapolate** second motion information for the second bitstream of compressed image data having a second GOP structure different from the first GOP structure” or “utilizing the stored first motion-related transcoding hints metadata to **extrapolate** second motion information for a second bitstream of compressed image data representing pictures of a second size different from the first size”; the specification does not disclose what the “utilizing motion information contained in the transcoding hints metadata to **extrapolate** second motion information for the second bitstream of compressed image data having a second GOP structure different from the first GOP structure” or “utilizing the stored first motion-related transcoding hints metadata to **extrapolate** second motion information for a second bitstream of

Art Unit: 2621

compressed image data representing pictures of a second size different from the first size” is, and therefore, the claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 5-9, 13-14, 17, 19-21, 24-26, 28-30, 53-56 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al (US 6,735,253 B1).

Chang et al discloses methods and architecture for indexing and editing compressed video over the world wide web comprising the same video/audio signal processing method for processing supplied video/audio signals, comprising the steps of:

describing transcoding target bitstream parameters (col. 15, ln. 15-17);

extracting transcoding hints metadata (col. 14, ln. 55-61);

storing the transcoding hints metadata (col. 14, ln. 55-61) ;

separating A/V material into segments (col. 14, ln. 55-61);

associating the transcoding hints metadata to the separated A/V segments (col.

14, ln. 40 – col. 16, ln. 12); and



transcoding the A/V material (col. 14, ln. 40 – col. 16, ln. 12 and fig. 13, el. 1210) as specified in claim 1 and 56; wherein the step of extracting the transcoding hints metadata comprises the steps of:

receiving a first bitstream of compressed image data having a first GOP structure (fig. 7, el. 720, segment 1);

obtaining first motion information from the first bitstream (I, P or B);

obtaining texture/edge information of a first segmentation (col. 14, ln. 55-61);

obtaining feature points and associated motion information from the first bitstream (beginning of segment 1 and segment 2, and col. 11, ln. 67 – col. 12, col. 3);  
and

obtaining region of interest information from the first bitstream (segment 1 or 2) as specified in claim 5; wherein the step of extracting the transcoding hints metadata further comprises the step of storing the first-motion information as transcoding hints metadata (col. 11, ln. 67 – col. 12, col. 3 and col. 14, ln. 55-61) as specified in claim 6; wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as parameters of a parametric motion model (col. 12, ln. 7-57) as specified in claim 7; wherein the step of extracting the transcoding hints metadata further comprises the step of employing the parametric motion model to describe a global motion within subsequent rectangular video frames (fig. 6) as specified in claim 8; wherein the step of extracting the transcoding hints metadata further comprises the step of employing the parametric motion model to describe a motion within a defined region of arbitrary shape (col. 3, ln.

Art Unit: 2621

50-55 and col. 12, ln. 7-57) as specified in claim 9; wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as a list of feature points with associated motion vectors, which are tracked within subsequent frames (fig. 7, beginning of segments 1, 2= feature points and motion vectors associated with subsequent P and B frames) as specified in claim 13; wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as a list of feature points with associated motion vectors, which are tracked within arbitrarily shaped regions, within subsequent frames (fig. 7, beginning of segments 1, 2= feature points and motion vectors associated with subsequent P and B frames and col. 14, ln. 55-61) as specified in claim 14; wherein the step of extracting the transcoding hints metadata further comprises the step of representing the feature points and associated motion-related transcoding hints metadata as a list (col. 7, ln. 24-47) as specified in claim 17; wherein the step of storing the transcoding hints metadata comprises the step of maintaining a buffer containing transcoding hints metadata for several situations (fig. 12, el. 1210) as specified in claim 19; wherein the step of storing the transcoding hints metadata further comprises the step of storing individual general transcoding hints metadata for several target devices (fig. 12, el. 1210-1220-1230-1240-1250-1260 and col. 14, ln. 40 – col. 16, ln. 12) as specified in claim 20; wherein the step of storing the transcoding hints metadata further comprises the step of storing general transcoding hints metadata for A/V segments of varying scene activity (col. 14, ln. 40 – col. 16, ln.

Art Unit: 2621

12 and figs. 1, 5a-5d and 9a) as specified in claim 21; wherein the step of transcoding the A/V material comprises the steps of:

- receiving a first bitstream of compressed image data having a first GOP structure (figs. 12 and 7);

- extracting transcoding hints metadata from the first bitstream (col. 14, ln. 55-61);

- utilizing the transcoding hints metadata associated to the first bitstream to facilitate transcoding (col. 14, ln. 51 – col. 16, ln. 12); and

- outputting a second bitstream (fig. 12, 1250-1210-1220) as specified in claim 24; wherein the step of transcoding the A/V material further comprises the step of:

- utilizing the transcoding hints metadata associated to temporal segments of the first bitstream to facilitate transcoding (fig. 7, segments 1 and 2 of video bitstream 710) as specified in claim 25; wherein the step of transcoding the A/V material further comprises the step of utilizing the transcoding hints metadata associated to spatial segments of the first bitstream to facilitate transcoding (Intra or I frame) as specified in claim 26; wherein the step of transcoding the A/V material further comprises the step of controlling a bit rate of the second bitstream so that a bit rate of the first bitstream is different from the bit rate of the second bit stream (col. 15, ln. 15 – col. 16, ln. 2) as specified in claim 28; wherein the step of transcoding the A/V material further comprises the step of adjusting a size of pictures represented by the first bitstream so that pictures represented by the second bitstream exhibits a size different from the size of the pictures represented by the first bitstream (fig. 9a and col. 12, ln. 58 – col. 13, ln. 8) as specified in claim 29; wherein the step of transcoding the A/V material further comprises the step of adjusting

Art Unit: 2621

a size of pictures represented by the first bitstream so that pictures represented by the second bitstream exhibits a size different from the size of the pictures represented by the first bitstream (fig. 9a and col. 12, ln. 58 – col. 13, ln. 8) as specified in claim 30; a video processing method for processing supplied video signals, comprising the steps of:

receiving a source video (fig. 12, el. 1220, 1230, 1240, 1250 or 1260); and

classifying contents of the source video using one of motion metadata, texture/edge metadata, and feature points and associated motion metadata, including a number of new feature points per frame (fig. 12, el. 1210 and col. 14, ln. 40 – col. 16, ln. 12) as specified in claims 53 and 58; wherein said method is used for determining transcoding parameters settings of a transcode (figs. 12, 9a and col. 14, ln. 40 – col. 16, ln. 12) as specified in claim 54; and wherein said method is used for organizing audiovisual material based on the classification of the contents of the source video (figs. 12, 9a and col. 14, ln. 40 – col. 16, ln. 12) as specified in claim 55.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.

As applied to claim 9 above, it is noted that Chang et al does not particularly disclose the parametric motion model is employed to describe the motion within the

Art Unit: 2621

defined region of arbitrary shape as used within MPEG-4 as specified in claim 10. The examiner takes official Notice that MPEG-4 is a well known coding standard used to code video object planes, and therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chang et al by applying the parametric motion model of Chang et al to describe the motion within the defined region of arbitrary shape as used within MPEG-4. Doing so would help extend the applicability of the system.

12. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al, in view of "An Adaptive Perceptual Quantization Algorithm For Video Coding" by Chun et al (cited by the applicant).

As applied to claim 5 above, it is noted that Chang et al does not particularly disclose the step of extracting the transcoding hints metadata further comprises the step of representing texture-related transcoding hints metadata as one of a list of DCT-coefficients and a measure (one of mean, minimum, maximum, variance, and standard deviation) derived thereof as specified in claim 15; and the step of extracting the transcoding hints metadata further comprises the step of representing edge-related transcoding hints metadata as one of a list of DCT-coefficients and a measure (one of mean, minimum, maximum, variance, and standard deviation) derived thereof () as specified in claim 16. Chun et al teaches the step of representing texture-related or edge related transcoding hints metadata as one of a list of DCT-coefficients and a measure (one of mean, minimum, maximum, variance, and standard deviation) (page 556, Paragraph III and fig. 4. And, therefore, it would have been obvious to one of

Art Unit: 2621

ordinary skill in the art at the time the invention was made to modify the system of Chang et al by representing texture-related or edge related transcoding parameters as one of a list of DCT-coefficients and a measure (one of mean, minimum, maximum, variance, and standard deviation) as taught by Chun et al. Doing so would help to minimize the coding distortion.

13. Claims 31, 33, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al, in view of Golin (US 6,058,143).

As applied to claims 24 and 30 above, it is noted that Chang et al does not particularly disclose the step of transcoding the A/V material further comprises the step of encoding the pictures represented by the second bitstream as field pictures when the pictures represented by the first bitstream are encoded as frame pictures as specified in claims 31 and 35; and wherein the step of transcoding the A/V material further comprises the step of interlacing the pictures represented by the first bitstream when the pictures represented by the first bitstream are received as a progressive sequence so that the pictures represented by the second bitstream are output as an interlaced sequence as specified in claims 33 and 37. Golin teaches that "There may be instances where these studios will need to transcode MPEG-2 pictures from field pictures to frame pictures, or from frame pictures to field pictures. There may also be instances where the studios will need to transcode MPEG-2 pictures from an interlaced sequence to a progressive sequence, or from a progressive sequence to an interlaced sequence". And, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chang et al by using transcoding

Art Unit: 2621

process to as taught by Golin et al. Doing so would help television studios to convert video bitstreams of picture data from one format to another.

***Allowable Subject Matter***

14. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not anticipate or render obviousness the step of associating the transcoding hints metadata to the separated A/V segments comprises the steps of:

calculating a number of new feature points per frame;

determining if the number of new feature points exceeds some thresholds; and

selecting based on said determination one of several transcoding hints states.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Lee (5,546,129) discloses feature point motion estimation digital video signal encoding method uses adaptive selection of feature points according to motions of objects between current frame and previous frame.

b. Liang et al (US 20020196853 A1) discloses reduced resolution video decompression.

Art Unit: 2621

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T. Diep whose telephone number is 571-272-7328. The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ND

/Nhon T Diep/  
Primary Examiner, Art Unit 2621